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**TITLE 785. OKLAHOMA WATER RESOURCES BOARD
CHAPTER 30. TAKING AND USE OF GROUNDWATER**

SUBCHAPTER 3. PERMIT APPLICATION REQUIREMENTS AND PROCESSING

SUBCHAPTER 15. WATER TRAPPED IN PRODUCING MINES

PART 1. GENERAL PROVISIONS

785:30-15-1. Purpose, scope and applicability

(a) This Subchapter establishes rules for the taking, using and disposal of water trapped in producing mines that overlie a Sensitive Basin and that are not otherwise exempt from this Subchapter as provided in 82 O.S. 1020.2 and this Subchapter.

(b) This Subchapter shall not apply to the taking, using, or disposal of salt water associated with the exploration, production or recovery of oil and gas. [82 O.S. § 1020.2(B)] This Subchapter shall not apply to the taking, using, or disposal of water trapped in producing mines outside of a [82 O.S. § 1020.2(B)] Sensitive Basin.

(c) This Subchapter shall not apply to the taking, using or disposal of water trapped in [82 O.S. 1020.2(C)] a producing mine:

(1) that overlies a Sensitive Basin; and

(2) that satisfies one or more of the following tests:

(A) a permit that authorizes mining operations or activities for the mine was issued by the ODOM on or before August 1, 2011;

(B) the mine operator filed an initial application for a permit for the mine with the ODOM on or before August 1, 2011; or

(C) a revision to the permit for the mine is approved by the ODOM; and

(3) for which the operator maintains the exemption as provided in 785:30-15-4.

785:30-15-2. Definitions

The following words and terms, when used in this Subchapter, shall have the following meaning, unless the context clearly indicates otherwise:

“Act” means Enrolled Senate Bill No. 597 enacted by the First Regular Session of the 53rd Oklahoma Legislature, published at Chapter 374, Okla. Sess. Laws 2011 and codified primarily at 82 O.S. § 1020.2.

“Augmentation” means the beneficial discharge of water from a mine pit into a stream emanating from a Sensitive Basin or into a location where it is likely to flow or percolate into a Sensitive Basin.

“Consumptive use” means diversion of water from a mine pit that is not returned to the groundwater basin or subbasin, or to a mine pit or holding basin, or to a definite stream, or to the land surface from which surface runoff flows into a mine pit. The term “consumptive use” includes the estimated moisture content driven off or carried away with mined material transported off the mining site, plus the amount of evaporation from the mine pit that exceeds the amount of direct precipitation and surface runoff into the mine pit, plus any amounts for other proposed beneficial uses off the mining site. [82 O.S. §1020.2(F)]

“Groundwater augmentation basin” means an unlined pond or dedicated recharge structure used to allow water to infiltrate or recharge into a Sensitive Basin.

“Management Plan” means a site-specific water management and conservation plan that satisfies the provisions of 785:30-15-6.

“MEPS” means Mine’s Equal Proportionate Share.

“Mine’s Equal Proportionate Share” means the amount equivalent to the Sensitive Basin’s equal proportionate share that is or would otherwise be allocated to the mine owner or operator for groundwater rights owned or leased by the owner or operator.

“Monitoring Plan” means a plan to monitor and report the accumulation and disposition of pit water during the previous calendar quarter and year that satisfies the provisions of 785:30-15-7.

“ODOM” means the Oklahoma Department of Mines.

“Preexisting exemption” means an exemption from the provisions of the Act and this Subchapter as provided in 82 O.S. § 1020.2(C) and 785:30-15-1(c).

“Pit water” means groundwater trapped or collecting in a producing mine pit that emanates from a Sensitive Basin.

“Sensitive Basin” means a sensitive sole source groundwater basin or subbasin.

“USGS” means the United States Geological Survey.

PART 3. MINES WITH AND WITHOUT EXEMPTIONS

785:30-15-3. Mines with no exemption

(a) The taking, use or disposal of pit water by an operator of a mine that does not have an exemption as provided in 82 O.S. § 1020.2(B) and 785:30-15-1(b) nor a preexisting exemption shall be in accordance with the provisions of this Subchapter.

(b) The taking, use or disposal of pit water in an amount less than five (5) acre feet per year, or by a mine with a limited use permit from the ODOM, shall be exempt from this Subchapter.

(c) The operator of a mine in a Sensitive Basin that does not have a preexisting exemption shall develop:

- (1) a written plan for augmentation of stream water or groundwater,
- (2) a Management Plan that meets the requirements of Section 785:30-15-6, and
- (3) a Monitoring Plan that meets the requirements of Section 785:30-15-7.

785:30-15-4. Mines with preexisting exemptions

(a) To maintain the exemption, an operator of a mine with a preexisting exemption must:

- (1) adopt and implement a Monitoring Plan that satisfies 785:30-15-7; and
- (2) timely file all quarterly and annual reports on or before the deadlines provided by 82 O.S. § 1020.2(E)(1); and
- (3) for each twelve month period after January 1, 2014 not consumptively use, from the mining site, an amount of groundwater which combined with any amounts used from permitted groundwater wells exceeds the MEPS.

(b) Subject to (c) and (d) of this Section, if at any time the mine operator fails to satisfy any of the provisions of (a) of this Section, the preexisting exemption shall be lost for that mine and the pertinent provisions of the Act and this Subchapter shall become applicable.

(c) Whenever it may appear to the Board that a preexisting exemption has been lost for a mine due to failure under 785:30-15-4(a)(1) or (a)(2), the Board shall give the operator thereof reasonable notice and an opportunity to show cause why the exemption should continue to apply. Absent a showing by the mine operator and a determination by the Board that the exemption should continue to apply, the exemption shall be deemed lost as of the date of the operator’s failure under 785:30-15-4(a)(1) or (a)(2).

(d) Whenever it may appear to the Board that a preexisting exemption has been lost for a mine due to failure under 785:30-15-4(a)(3), the Board shall give the operator thereof reasonable notice thereof. The operator may avoid loss of the preexisting exemption by filing with the

Board, within ninety (90) days after the date of the reported exceedance, a Management Plan which demonstrates to the satisfaction of the Board that such consumptive use exceedance is:

- (1) offset by augmentation of stream water flow or of groundwater by recharge; or
- (2) not likely to reduce the natural flow of springs or streams emanating from the Sensitive Basin; or
- (3) remedied by acquisition of sufficient groundwater rights within the ninety day period after the reported exceedance.

If the operator does not satisfy the preceding requirements to maintain the exemption, the operator shall come into compliance with 82 O.S. § 1020.2(D) and 785:30-15-3 within ninety (90) days after the date of reported exceedance.

PART 5. AUGMENTATION, MANAGEMENT AND MONITORING PLANS

785:30-15-5. Augmentation

(a) Stream augmentation.

- (1) A mine operator may claim credit for one hundred percent (100%) of the amount of water it discharges to a stream emanating from a Sensitive Basin during a time of low flow that is less than or equal to the 50% exceedance or median daily flow level listed by the USGS within the watershed where the mine is located. If the receiving stream or watershed is ungaged or does not have calculated median flow data available, the OWRB will utilize the USGS *StreamStats* extrapolation model to calculate the 50% exceedance or median flow level.
- (2) The OWRB will review the 50% exceedance flows for gaged streams within the watershed on an annual basis.
- (3) A mine operator shall monitor the flow conditions at the designated stream gage in order to determine whether and when stream augmentation credit can be obtained. The flows, dates and volumes of water discharged to a stream for augmentation credit shall be identified by the mine operator in the quarterly and annual reports required by 82 O.S. § 1020.2(E)(1).
- (4) There shall be no credit for any water discharged to streams when the unaugmented flow is greater than the 50% exceedance or median flow level described in (a)(1) of this Section.

(b) Groundwater augmentation.

- (1) A mine operator may claim credit for one hundred percent (100%) of the amount of water that is measured or calculated to infiltrate into a Sensitive Basin from a groundwater augmentation basin that meets the requirements of this Section, less any water diverted from such basin.
- (2) To qualify for credit, the mine operator must satisfy the following:
 - (A) The operator shall make a one-time water balance demonstration to the satisfaction of the Board that recharge from the subject groundwater augmentation basin exceeds evaporation. Once such a demonstration has been made, no accounting for evaporation or vegetative losses will be required. If a material change is made to the groundwater augmentation basin, a new demonstration shall be made for the changed basin.
 - (B) Each groundwater augmentation basin shall have a staff gage or other measuring device at least as accurate installed such that the gage registers the lowest water level in the basin. The staff gage or other appropriate device must be readable from a readily accessible location adjacent to the basin.
- (3) No specific design or maintenance requirements need be followed for dedicated recharge structures provided that they shall not be filled by pumping to such a level that they overflow.

(4) The amount of water recharged to the aquifer from a groundwater augmentation basin shall be calculated on a mass balance basis. The applicable equation is:

$$GW_a = B_a * [(h_2 - h_1) - (E * 0.7)] + (I - O)$$

Where:

GW_a is the volume of water exiting the bottom and sides of the augmentation basin;

B_a is the surface area of the augmentation basin (assumes vertical sides);

h₁ is the elevation of the water level in the basin at the beginning of the applicable time period determined using the installed staff gage;

h₂ is the elevation of the water level in the basin at the end of the applicable time period;

0.7 is the lake evaporation coefficient applied to pan evaporation;

E is the calculated pan evaporation rate determined at the nearest Mesonet station determined as the sum of daily values for the applicable time period;

I is the total inflow volume of water to the basin from all sources (including rainfall) for the applicable time period (it may be zero (0)) determined by measurement or reasonable estimation; and

O is the total outflow volume of water from the basin by all pathways except evaporation for the applicable time period (it may be zero (0)) determined by measurement or reasonable estimation.

(c) Applications of augmentation credit.

(1) Credit obtained from augmentation of stream water or groundwater or both may be used by the mine operator to reduce or offset the amount of consumptive use of pit water by the operator that exceeds the MEPS.

(2) Credit obtained from augmentation of stream water or groundwater shall not be considered in the amount used pursuant to any permit to use stream water or groundwater that the mine operator may have; provided, the taking, use or disposal of pit water for stream augmentation pursuant to a Management Plan prepared in consultation with the Board may be claimed in an annual report of stream water use in order to avoid forfeiture of a right to use stream water held by the owner or operator of the mine.

785:30-15-6. Management Plans

(a) Each Management Plan shall contain the following information. The Management Plan and each of these elements must be approved by the Board Executive Director or his/her designee prior to mine operation.

(1) Characterization of area; plot plan of the proposed/initial mine site.

(A) Location of the initial mining pit;

(B) Location(s) of the processing facilities; and

(C) Location(s) and characterization of initial collection, settling, and retention impoundments.

(2) Facility layout; water flow diagram of the proposed/initial mine site.

(A) All water collection, settling and retention impoundments;

(B) Direction of all major water flow between the impoundments;

(C) All planned groundwater, mine pit water, and stream water diversion points with estimated flows;

(D) All stream water augmentation points;

(E) All groundwater recharge points; and

(F) Locations and planned quantities of all points of consumptive use.

(3) Water Budget; anticipated flow of water into and out of mine site.

(A) Water flow entry and exit points;

- (B) Groundwater;
- (C) Mine pit water;
- (D) Stream water;
- (E) Precipitation runoff;
- (F) Evaporation; and
- (G) Augmentation.

(4) Water rights information.

- (A) Permit or application number;
- (B) Entity name;
- (C) Permitted amount; and
- (D) Dedicated acres.

(5) Consumptive use of pit water. This element shall show information derived from the guidelines to estimate consumptive use of pit water set forth in Appendix C to this Chapter.

(6) Determination of water amounts. A Management Plan shall provide for the mine operator on a daily basis to measure or make a reasonable estimate, utilizing methods described or approved by the Board, of the following volumes, separately stated:

- (A) Groundwater that enters the pit;
- (B) Surface water that enters the pit;
- (C) Water that is diverted from the pit;
- (D) Disposition of the water from the pit;
- (E) Consumptive use of the water from the pit;
- (F) Water diverted from a stream or pond;
- (G) Groundwater pumped from water wells;
- (H) Water discharged to a stream;
- (I) Water recharged to the aquifer;
- (J) Precipitation at the mine site;
- (K) Evaporation from all surface water; and
- (L) Water obtained from other sources, such as municipalities, rural water districts, or other entities.

(7) Monitoring groundwater levels from a groundwater observation well. A Management Plan shall provide for the operator to drill, complete and utilize one or more groundwater observation wells that satisfy the following:

- (A) Mine site.** A groundwater observation well shall be located in the local, if known, or regional hydrological down-gradient area of the mine site.
- (B) Adjacent to a mine site stream gage.** Additionally, if a stream gage is required to be installed on a perennial or intermittent stream on mine property, then a groundwater observation well shall be drilled adjacent to or near the stream gage as approved by the Board.
- (C) Requirements for observation wells.**
 - (i) Each groundwater observation well shall be drilled to such depth that the well encounters 100 feet or more, if present, of the saturated portion of the Sensitive Basin.
 - (ii) Water levels in the well shall be measured hourly and recorded on a data logger.

(8) Other monitoring on a mine site.

- (A) If a mine operator installs a stream gage on the perennial portion of a tributary or main stem of a stream passing through the mine site, then daily stream flows shall be recorded.
- (B) If a mine operator installs a rain gage on the mining site, then daily precipitation data shall be recorded.

(9) **Quality assurance plans.** The Management Plan for each mine shall include a quality assurance plan which describes procedures and methodologies for how data will be collected, operation and maintenance of all measuring equipment, and evaluation of data to ensure data is appropriate and scientifically defensible. Such quality assurance plan shall be consistent with the Federal or State Quality Assurance Project Plan guidelines specified by the Board.

(10) **Reporting.** Each quarter and year in accordance with the schedule provided in 82 O.S. § 1020.2(E)(1), the mine operator shall file with the Board a report in a form prescribed by the Board or other format satisfactory to the Board. The report shall contain:

(A) The data and information listed in (a)(6) and (a)(7) of this Section, and

(B) Any modifications to the plot plan, facility layout, or water right details for the mine, plus an explanation of any changes in the methodologies used for the reports.

(b) Data recorded pursuant to this Section shall be stored in a format readily readable by most common computer programs. All data collected must be stored while the mine is in operation and for a period of five years after the mine is closed in a format directed by the Board. Such data shall be provided to the Board upon request by the Board.

785:30-15-7. Monitoring Plans

(a) **Determinations of amounts of water.** A Monitoring Plan shall be approved by the Board Executive Director or his/her designee prior to mine operation. The Monitoring Plan shall provide for the mine operator on a daily basis to measure or make a reasonable estimate of the following volumes, separately stated:

(1) Groundwater that enters the pit;

(2) Surface water that enters the pit;

(3) Water that is diverted from the pit;

(4) Disposition of the water from the pit;

(5) Consumptive use of the water from the pit;

(6) Water diverted from a stream or pond;

(7) Groundwater pumped from water wells;

(8) Water discharged to a stream;

(9) Water recharged to the aquifer;

(10) Precipitation at the mine site;

(11) Evaporation from all surface water; and

(12) Water obtained from other sources, such as municipalities, rural water districts, or other entities.

(b) **Reporting.** Each quarter and year in accordance with the schedule provided in 82 O.S. § 1020.2(E)(1), the mine operator shall file with the Board a report containing the data and information listed in (a) of this Section. The report shall be in a form prescribed by the Board or other format satisfactory to the Board.

(c) Data recorded pursuant to this Section shall be stored in a format readily readable by most common computer programs. All data collected must be stored while the mine is in operation and for a period of five years after the mine is closed in a format directed by the Board. Such data shall be provided to the Board upon request by the Board.

APPENDIX C. GUIDELINES TO ESTIMATE CONSUMPTIVE USE OF PIT WATER [NEW]

PIT GROUNDWATER VOLUME	
1	Total volume of water pumped from the producing mine pit(s)
2	Volume of precipitation that falls onto the surface of water in the producing mining pit(s)
3	Portion of total precipitation that flows over the land surface that drains into the mine pit water
4	Other non-pit waters pumped from the producing mine pit
5	Add lines 2 through 4
6	Pit Groundwater Volume Line 1 minus Line 5
DEFINED ELEMENTS OF CONSUMPTIVE USE	
7	Volume of pit groundwater that is driven off (by drying) the mined material transported off the mine site
8	Volume of pit groundwater that is carried away with the mined material transported off the mining site (shipped)
9	Volume of pit groundwater that evaporates from the producing mine pit, process water ponds, and lined ponds (Excluding structures used for augmentation)
10	Volume of pit groundwater that is used for other beneficial uses off the mine site
11	Defined Elements of Consumptive Use of Pit Groundwater Add Lines 7 through 10
PIT GROUNDWATER BALANCE	
12	Line 6 minus Line 11
13	Groundwater Augmentation Volume of pit groundwater returned to the groundwater basin or subbasin
14	Stream Augmentation Volume of pit groundwater discharged to a definite stream, during flow conditions that are less than or equal to 50% exceedance or median historic flows
15	Precipitation & Run-off Volume of precipitation and surface run-off into a recharge pit or holding pond used for augmentation
16	Additional Discharge Volume of pit groundwater discharged to a definite stream, not meeting stream augmentation credit criteria
17	Recycled Pit Groundwater Volume of pit groundwater returned to a mine pit or holding basin (not included on lines 7 through 10)
18	Other Non-Consumptive Losses Including pit groundwater returned to the land surface from which surface runoff flows into a mine pit, and other losses (not included in lines 7 through 10)
19	Add lines 13 through 18
20	Other Consumptive Use (adjusted) Line 12 minus Line 19
TOTAL REPORTED CONSUMPTIVE USE OF PIT	
21	Total Net Reported Consumptive Use Line 11 plus Line 20

Notes

Table Line Number

- 2 Precipitation that falls directly in contact with pit water should be measured or reasonably estimated. Precipitation measurements may be obtained from (a) on-site installed gages, if approved by the Board and if such gages are installed, calibrated and maintained according to their manufacturers' requirements, (b) Mesonet stations within 30 miles of the pit site, or (c) if approved by Board, from other appropriately instrumented, maintained and calibrated meteorological observation stations. If appropriate, estimates based on combined gages may be made utilizing an established method approved by the Board.
- 3 Includes the portion of precipitation that flows into a mining pit estimated using techniques common to hydrological practice, such as the Rational Method, the SCS Method, the Green & Ampt Method, or from runoff models.
- 7, 8 Includes the estimated moisture content driven off or carried away with the mined material transported off the mining site. Since estimates of losses are specific to each mining operation, various industrial standard measurement or calculation methods may be proposed.
- 9, 13
and
15 Evaporation includes the volume of any pit water (groundwater component only) that returns to the atmosphere as vapor, including all impoundments containing pit water in the mining facility that are not used for groundwater augmentation. The volume of pit water that is evaporated may be estimated using daily pan evaporation rates from Mesonet stations within 30 miles, or another widely available, real-time data source approved by the Board. A pan coefficient of 0.7 should be applied to obtain lake evaporation rates. Daily pan evaporation data is available online at:
<http://agweather.mesonet.org/models/evapotranspiration/seasonalout.html>.
Evaporation losses of the water from the mine pit, lined holding structures, and processing ponds will be included in the consumptive use calculation, but only the measured groundwater portion of this water will be counted. Evaporation of the groundwater portion of water from any pit or structure used for groundwater augmentation will not be considered as consumptive use.
- 10 Defined in the Act as "*amounts for other proposed beneficial uses off the mining site*" other than stream water and groundwater augmentation.